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EXAMINER

HOANG, HIEU T

ART UNIT

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PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/664,635	Applicant(s) NAKAMURA, MITSUHIRO	
	Examiner HIEU T. HOANG	Art Unit 2452	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 12/01/2008.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1,2,4,7,9 and 10 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1,2,4,7,9 and 10 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

1. This office action is in response to the amendment filed on 12/01/2008.
2. Claims 1, 2, 4, 7, 9-10 are pending.

Response to Arguments

3. Applicant's arguments have been fully considered but they are moot in view of new ground of rejection.

Claim Rejections - 35 USC § 112

4. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

5. Claim 2 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. The claims recite "fluctuating a period of the periodical re-allocation of each path employed by each of the reserved sessions *so as to be shorter as the sum of reservation request failure counts of all links becomes larger*". "So as to be shorter as the sum of reservation request failure counts of all links becomes larger" is considered an intended use of fluctuating the reallocation period and is therefore given no weight in the examining process.
6. Claim 2 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. The claim recites "fluctuating a weight of a link in order to

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increase a difficulty of selection of the link with a large number of the failure count.” “The failure count” lacks antecedent basis. Moreover, it is vague how selection of a link by its failure count is involved in the invention. In other words, usage of selection of the link is not disclosed clearly in the method claim for managing resource in a label switching network.

Claim Rejections - 35 USC § 103

7. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

8. Claims 1, 2, 4, 7, 9-10 are rejected under 35 U.S.C. 103(a) as being unpatentable over Szviatovszki et al. (US 6,956,821, hereafter Szviatovszki), in view of Pan et al. (Processing Overhead Studies in Resource Reservation Protocols, hereafter Pan), further in view of Pan and Schulzrinne (Lightweight Resource Reservation Signaling: design, performance and implementation, hereafter Schulzrinne)

9. For claim 1, Szviatovszki discloses a resource management method for managing resources in a label switching network, comprising:

retaining session data including bandwidth ensured by reserved sessions which have respectively completed a reservation of a requested bandwidth (col. 3 lines 17-20,

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an established label switch path (LSP) with reserved bandwidth, col. 8 lines 34-40, reserved bandwidth) and bandwidth occupied by an on-communication session (fig. 3, step 36, available bandwidth is total bandwidth available after excluding occupied bandwidth by on-communication sessions, col. 8 lines 34-40); and

executing re-allocation of each path employed by each of the reserved sessions with respect to the bandwidth ensured by the reserved sessions based on the retained session data (col. 3 lines 22-31, pre-empted established LSPs are reallocated or rerouted according to the reversed LSP bandwidth).

Szviatovszki does not disclose periodical re-allocation.

However, Pan discloses the same (section 2.4, lines 5-13, page 5, if...else, if a resource reservation attempt is failed (not available bandwidth to fulfill a reservation request), retry resource reservation at each refresh cycle, “after a flow...while...do...return”, reservable resource is recalculated and reallocated to flows in the queue) based on the reserved session data (section 2.2, par. 2, saved flowspec.)

It would have been obvious for one skilled in the art at the time of the invention to combine the teachings of Szviatovszki and Pan to retry resource reservation after a failed attempt.

Szviatovszki-Pan discloses that a reservation retry period for a failed reservation is not good enough and is lengthy (Pan, 2.4, par. 2, retrying reservation of failed reservation request after a refresh cycle, the refresh cycle is lengthy) and discloses the needs for a more aggressive method for routers to retry failed reservations. Pan also

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discloses a number of reservation retries of a failed reservation (Pan, page 5, first codes portion, increment retry count after a reservation failure).

Szviatovszki-Pan does not disclose fluctuating a period of the periodical re-allocation of each path employed by each of the reserved sessions.

However, Schulzrinne discloses that refresh frequency of a retry reservation or reallocation of reserved paths can be dynamically fluctuated based on network condition (page 5, par. 2)

It would have been obvious for one skilled in the art at the time of the invention to modify the teachings of Szviatovszki and Pan and Schulzrinne to change the period of the periodical re-allocation of the reserved sessions in order to allow more aggressive reservation depending on the number of reservation failures so that reservation can be reserved earlier.

10. For claim 2, Szviatovszki-Pan-Schulzrinne further discloses recording a failure count, for a fixed period, of a link causing a failure in a reservation request in a previous period; and

fluctuating a weight of the link in order to increase a difficulty level of selection of the link with a large number of the failure count (Pan, page 4, last 3 lines, suspend misbehaving flows, flows that have failed their end-to-end reservation attempt too many times are ignored by routers, leaving resources for other flows, meaning the weight of a flow (priority of the flow) is reduced significantly according to its reservation failure counts).

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11. For claim 4, Szviatovszki discloses a reservation path optimization system for optimizing a reservation path between specified nodes configuring a label switching network, and including a plurality of modules stored in a computer-readable medium, comprising:

a reservation setting module for setting reservation paths and bandwidth for establishing sessions between specified nodes (col. 8 lines 28-48, LSP path and bandwidth settings); and

a reservation path re-allocating module for re-allocating each of the reservation paths which has been already set by said reservation setting module based on the bandwidth which have been already set by said reservation setting module except bandwidth occupied by an on-communication session (col. 3 lines 22-31, pre-empted established LSPs are reallocated or rerouted according to the reversed LSP bandwidth).

Szviatovszki does not disclose periodically re-allocating.

However, Pan discloses the same (section 2.4, lines 5-13, page 5, if...else, if a resource reservation attempt is failed (not available bandwidth to fulfill a reservation request), retry resource reservation at each refresh cycle, “after a flow...while...do...return”, reservable resource is recalculated and reallocated to flows in the queue) based on the reserved session data (section 2.2, par. 2, saved flowspec.)

It would have been obvious for one skilled in the art at the time of the invention to combine the teachings of Szviatovszki and Pan to retry resource reservation after a failed attempt.

Szviatovszki-Pan discloses that a reservation retry period for a failed reservation is not good enough and is lengthy (Pan, 2.4, par. 2, retrying reservation of failed reservation request after a refresh cycle, the refresh cycle is lengthy) and discloses the needs for a more aggressive method for routers to retry failed reservations. Pan also discloses a number of reservation retries of a failed reservation (Pan, page 5, first codes portion, increment retry count after a reservation failure).

Szviatovszki-Pan does not disclose fluctuating a period of the periodical re-allocation of each path employed by each of the reserved sessions.

However, Schulzrinne discloses that refresh frequency of a retry reservation or reallocation of reserved paths can be dynamically fluctuated based on network condition (page 5, par. 2)

It would have been obvious for one skilled in the art at the time of the invention to modify the teachings of Szviatovszki and Pan and Schulzrinne to change the period of the periodical re-allocation of the reserved sessions in order to allow more aggressive reservation depending on the number of reservation failures so that reservation can be reserved earlier.

12. Claim 10 is rejected for the same rationale as in claim 4.

13. For claim 7, Szviatovszki-Pan-Schulzrinne further discloses the reservation path re-allocating module periodically re-allocates each of the reservation paths based on a

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specified algorithm (Pan, page 5, reallocating based on number of failure retries and renewed bandwidth).

14. For claim 9, Szviatovszki-Pan-Schulzrinne further discloses the label switching network is an MPLS network, and the reservation paths are Label Switched Paths (Szviatovszki, fig. 5, LSP, MPLS).

Conclusion

15. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure and is disclosed in form PTO 892.

16. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the mailing date of this final action.

17. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Hieu T. Hoang whose telephone number is 571-270-

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1253. The examiner can normally be reached on Monday-Thursday, 8 a.m.-5 p.m., EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, John Follansbee can be reached on 571-272-3964. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300. Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

HH

/Kenny S Lin/
Primary Examiner, Art Unit 2452